

not unreasonably anticipate, after the wonders that geology has already made known to us. Animals the most isolated in existing nature have been shown to be but the last of a series of allied species which have lived and died upon the earth. Every class and every order has furnished some examples, from which we may conclude, that all isolations in nature are apparent only, and that whether we discover their remains or no, every animal now existing has had its representatives in past geological epochs.

IV.—*Polyzoa collected by Mr. M'Andrew on the Coast of Norway and Finmark in 1856.* By GEORGE BUSK, F.R.S. & L.S.*

[With a Plate.]

MOLLUSCA.

Class POLYZOA.

Order I. P. INFUNDIBULATA.

Suborder I. Cheilostomata.

1. Fam. CABEREADÆ, Busk (*B. M. Cat.* p. 37).

1. *Caberea*, Lamx. (*B. M. Cat.* p. 37).

1. *C. Hookeri*, Fleming (*B. M. Cat.* p. 39. pl. 38. fig. 2).

2. Fam. CELLEPORADÆ, Busk (*B. M. Cat.* p. 85).

1. *Cellepora*, O. Fabricius (*B. M. Cat.* p. 85).

1. *C. cervicornis*, auctor. (pars); Couch, Cornish Fauna, p. 111, pl. 19. (Pl. I. fig. 1.)

Much confusion exists with respect to this species, which I have no doubt more properly belongs to *Eschara*. The form here intended, however, which is plainly identical with Mr. Couch's, and therefore most probably with Borlase's, is quite distinct from the *Eschara cervicornis* of the *B. M. Cat.*, and I believe also from that of M.-Edwards (*Sur les Eschares*, p. 15. pl. 1. fig. 1), though perhaps not from the form represented in his pl. 2. fig. 1. The genus *Eschara* requires careful revision, as does also *Cellepora*.

* The list is arranged according to the artificial classification adopted in my Catalogue of Marine Polyzoa published by the British Museum, in which, so far as that Catalogue at present extends, the synonymy will be found.

3. Fam. ESCHARADÆ, Busk (B. M. Cat. p. 88).

1. *Eschara*, Ray (B. M. Cat. p. 89).1. *E. teres*, nob. (n. sp.). Pl. I. fig. 2.

Polyzoary composed of distant, cylindrical, terete branches. Cells ovate, immersed, their outline being indicated by a single row of minute punctures. Mouth arcuate above, with a simple straight lower lip, *within* which is an avicularium with an orbicular mandible.

2. *E. Skenei* (var. *tridens*), nob. (n. sp.). Pl. I. fig. 3.

Polyzoary composed of short, flattened, expanding branches dilated at the ends. Cells distinct, elongated. Mouth suborbicular, horizontal, protected in front by a trifid process consisting of a central (unarmed?) rostrum and an elevated avicularium on either side (Pl. I. fig. 3 c).

3. *E. saccata*, nob. (n. sp.). Pl. I. fig. 5.

Polyzoary composed of elongated flattened branches dilated at the ends. Cells (in the growing portions) furnished with a strongly projecting avicularium, in the form of an elongated sac or pouch which covers nearly the whole front of the cell (Pl. I. fig. 5 b). Mandible rounded.

4. *E. rosacea*, nob. (n. sp.). Pl. I. fig. 4.

Polyzoary composed of short, somewhat undulating or contorted, expanding lobes. Cells deeply immersed, broadly ovate, surface granulated. Mouth rounded or arcuate above, with a sinus in the middle of the lower lip. An avicularium placed obliquely on one side close to and slightly projecting over the margin of the mouth.

In the younger cells the avicularium is seen distinctly projecting above the surface of the cell, but in the older and thickened parts of the polyzoary its extremity only is seen within the depression leading to the mouth of the cell (Pl. I. fig. 4 c). Young specimens (*b, b*) are of a delicate rose-colour and simple form.

2. *Retepora*, Imperato (B. M. Cat. p. 93).1. *R. cellulosa*, Linn. (B. M. Cat. p. 93. pl. 121. figs. 3-8; pl. 123. figs. 5, 6).

A small fragment only occurs.

2. *R. beaniana*, King (B. M. Cat. p. 94. pl. 123. figs. 1-5).

Apparently very abundant.

Suborder II. *Cyclostomata*.I. Fam. *IDMONEADÆ*, Busk (*English Cyclopaedia*, Art. "Polyzoa").1. *Idmonea*, Lamx.1. *I. atlantica*, Ed. Forbes. Pl. I. fig. 6.

I. atlantica, Johnst. Brit. Zooph. 2nd edit. vol. i. p. 278. pl. 48.

I. radians, Van Beneden, Bull. de l'Acad. de Bruxelles, t. xvi. p. 647. pl. 1. figs. 4-6.

In external habit *I. atlantica* very closely approaches some forms of the Australian *I. radians*, Lamk., figured and described by M.-Edwards (Sur les Crisies, &c., p. 25. pl. 12. figs. 4, 4 a & 4 b), but the figure has been taken from an imperfectly grown specimen. In all essential characters, however, the two forms are perfectly distinct. In *I. radians* the mouth of the tubes is distinctly bilabiate, in *I. atlantica* simple or merely sinuated; in *I. radians* the surface of the branches is perforated like a sieve with numerous closely contiguous pores, whilst in *I. atlantica* it is quite smooth and merely dotted with minute white spots. The branches also in *I. atlantica* are not nearly so much compressed as they are in *I. radians*, in which, as in the apparently closely allied *I. coronopus*, DeFrance, a fossil form found at Grignon (M.-Ed. l. c. p. 23. pl. 12. fig. 3), the anterior side of the branches rises in the middle into an acute ridge. Taking also into consideration the wide difference of locality, it would appear quite certain that *I. atlantica* and *I. radians*, notwithstanding their striking outward resemblance under certain conditions of growth, are perfectly distinct species.

2. *Hornera*, Lamx.1. *H. frondiculata*, Lamx. Pl. I. fig. 7 a.

H. frondiculata, Lamx. Exp. Méth. p. 41. pl. 26. fig. 1, & pl. 74. figs. 7, 9; M.-Edwards, Sur les Crisies, p. 17. pl. 10. fig. 1; Blainville, Man. d'Actin. p. 419.

Retepora frondiculata, Lamarek, Hist. d. An. s. V. 2de édit. p. 277.

Millepora tubipora, Ellis & Soland. p. 139. pl. 26. fig. 1.

M. lichenoides, Linn.; Pallas, Elenchus, p. 245; Esper, Mill. pl. 3. figs. 1-4.

Madrepore rameux, Marsigli, Hist. de la Mer, p. 49. pl. 33. figs. 162-164.

Var. α . *H. affinis*? M.-Edwards, l. c. pl. 10. figs. 1, 1 a. Pl. I. fig. 7 b.

The localities assigned to this species by Lamouroux are Kamtschatka, the Indian and Australian Oceans, and the

Mediterranean. But comparison of the specimens collected by Mr. M'Andrew, and of others in my possession, collected by Capt. Beaufort in lat. $61^{\circ} 35' N.$, long. $90^{\circ} 42' W.$, with numerous and excellent specimens collected on the coast of Patagonia by Mr. Darwin, and of Australia by Mr. M'Gillivray, has fully satisfied me that the northern and southern forms are perfectly distinct. I suspect also that it will be found that the Mediterranean locality belongs to a third, distinct species, should the latter retain a place in the genus *Hornera* at all.

2. Fam. DISCOPORADÆ, Busk (*Engl. Cyclopedia*, Art. "Polyzoa").

1. *Diastopora* (simplex), M.-Ed. (Sur les Crisies, &c.).

1. *D. obelia*, Johnst. Brit. Zooph. 2nd edit. vol. i. p. 276. pl. 47. figs. 7, 8.

Tubulipora obelia, Couch, Corn. Faun. p. 108; Johnst. Brit. Zooph. p. 269. pl. 30. figs. 7, 8; Thompson, Ann. Nat. Hist. v. 252.

I have preferred the affix of M.-Edwards's name to the genus, although the term *Diastopora* was first employed by Lamouroux. The clear definition of the genus by the former plainly entitles him to the preference. The *Berenicea* of Lamouroux, as observed by M.-Edwards, should certainly be referred to the same genus.

2. *Tubulipora*, Lamarck.

1. *T. hispida*, Fleming.

T. hispida, Johnst. Brit. Zooph. 2nd edit. vol. i. p. 268. pl. 47. figs. 9, 10, 11.

Discopora hispida, Fleming, Brit. Anim. 530; Couch, Corn. Faun. 109. pl. 19. fig. 1? (very bad).

3. *Defrancia*, Bronn (1825). *Defranceia* (1846), Reuss, Fossil. Polypar. d. W. Tertiärb.

Pelagia, Lamx.

Lichenopora, Michelin.

Tubulipora (pars), M.-Ed.

Ceriopora (pars), auctor.

Of this genus numerous fossil forms exist in the cretaceous and tertiary formations, and several living species appear to have been noticed. Of the two here described, one is already known as living, and the other only as fossil in the marl (Mergelgrund) of Essen, and in the tertiary beds of Vienna.

α. *Interstices of costæ porous.*

1. *D. truncata*, Jameson. Pl. I. fig. 8.

Polyzoary fungiform; simple; centre of upper surface of disk

cupped; surface of stem and back of disk covered with small, oblong, rather distant pores (fig. 8 c).

Millepora truncata, James. Wern. Mem. i. 560.

Tubulipora truncata, Fleming, Brit. Anim. 529; Johnst. Brit. Zooph. 271. pl. 33. figs. 8-10.

β. *Interstices of costæ smooth.*

2. *D. stellata*, Goldfuss. Pl. I. fig. 9.

Polyzoary fungiform, proliferous, flattened above; costæ numerous, slender; surface of stem covered with large, hexagonal, closely contiguous pits (fig. 9 c).

Ceripora stellata, Goldfuss, Petrefact. i. p. 39. t. 30. fig. 12; Philippi, Die Tertiärverst. der Nordwestl. Deutschlands, p. 36, 37.

Defrancia stellata, Reuss, Die fossil. Polyparien des Wiener Tertiärbeckens, p. 37. pl. 6. fig. a.

EXPLANATION OF PLATE I.

- Fig. 1. *Cellepora cervicornis*, auctor.: a, nat. size; b, portion of surface towards the end of a branch magnified 25 diam.; c, cells magnified.
- Fig. 2. *Eschara teres* (n. sp.): a, natural size; b, portion magnified; c, transverse section of a small branch magnified.
- Fig. 3. *Eschara Skenei* (var. *tridens*): a, nat. size; b, portion magnified; c, front of cell magnified.
- Fig. 4. *Eschara rosacea* (n. sp.): a, a, a, nat. size; b, portion magnified; c, portion magnified (older state of cells); d, portion magnified (young state of cells).
- Fig. 5. *Eschara saccata* (n. sp.): a, nat. size; b, portion magnified (young state of cells); c, portion of surface in older parts magnified.
- Fig. 6. *Idmonea atlantica*, E. Forbes: a, nat. size; b, front view of branch magnified; c, side view of branch magnified; d, front of young branch magnified; e, back of branch magnified.
- Fig. 7. *Hornera frondiculata*, Lamx.: a, nat. size; b, var. *affinis*? nat. size; c, front view of branch magnified; d, back view of branch magnified.
- Fig. 8. *Defrancia truncata* (n. sp.): a, nat. size; b, portion of costæ magnified; c, surface of stem magnified.
- Fig. 9. *Defrancia stellata*?, Goldfuss: a, nat. size; b, portion of edge of disk magnified; c, surface of stem magnified.

V.—On the Evils of Increasing Synonyms.

By S. P. WOODWARD, F.G.S.

To the Editors of the *Annals of Natural History*.

GENTLEMEN,

IN the May Number of the 'Annals' I showed that "the type of Mr. Jeffreys' new genus (*Schismope*) was a typical *Scissurella*."